

# AMENDMENTS TO THE CLAIMS:

Claims 1-31 (cancelled).

32. (currently amended) An article of manufacture comprising:  
a metallic substrate;  
a thermal barrier coating disposed on the metallic substrate;  
wherein the thermal barrier coating comprises a spinel material and an oxide material admixed to the spinel material, the oxide material selected from the group of MgO,  $ZrO_2$ -HfO<sub>2</sub>, NiO, CoO, Al<sub>2</sub>O<sub>3</sub>-and Cr<sub>2</sub>O<sub>3</sub>.

33. (currently amended) The article of manufacture of claim 32, wherein the spinel material is selected from the group of CoMg<sub>2</sub>O<sub>4</sub>, CoFe<sub>2</sub>O<sub>4</sub>, CoCr<sub>2</sub>O<sub>4</sub>, CoTi<sub>2</sub>O<sub>4</sub>, CoAl<sub>2</sub>O<sub>4</sub>, NiMg<sub>2</sub>O<sub>4</sub>, NiFe<sub>2</sub>O<sub>4</sub>, NiTi<sub>2</sub>O<sub>4</sub>, TiMg<sub>2</sub>O<sub>4</sub>, TiFe<sub>2</sub>O<sub>4</sub>, TiCr<sub>2</sub>O<sub>4</sub>, TiTi<sub>2</sub>O<sub>4</sub>, and TiAl<sub>2</sub>O<sub>4</sub>.

34. (previously added) The article of manufacture of claim 32, wherein a first portion of the thermal barrier coating comprises a normal spinel material and a second portion of the thermal barrier coating comprises an inverse spinel material.

35. (currently amended) An article of manufacture comprising:  
a metallic substrate;  
a thermal barrier coating disposed on the metallic substrate;  
wherein the thermal barrier coating comprises a spinel material selected from the group of CoMg<sub>2</sub>O<sub>4</sub>, CoFe<sub>2</sub>O<sub>4</sub>, CoCr<sub>2</sub>O<sub>4</sub>, CoTi<sub>2</sub>O<sub>4</sub>, CoAl<sub>2</sub>O<sub>4</sub>, NiMg<sub>2</sub>O<sub>4</sub>, NiFe<sub>2</sub>O<sub>4</sub>, NiTi<sub>2</sub>O<sub>4</sub>, TiMg<sub>2</sub>O<sub>4</sub>, TiFe<sub>2</sub>O<sub>4</sub>, TiCr<sub>2</sub>O<sub>4</sub>, TiTi<sub>2</sub>O<sub>4</sub>, and TiAl<sub>2</sub>O<sub>4</sub>.

36. (currently amended) The article of manufacture of claim 35, further comprising an oxide material admixed to the spinel material, the oxide material selected from the group of MgO,  $ZrO_2$ -HfO<sub>2</sub>, NiO, CoO, Al<sub>2</sub>O<sub>3</sub>-and Cr<sub>2</sub>O<sub>3</sub>.

37. (previously added) An article of manufacture comprising:  
a metallic substrate;  
a thermal barrier coating disposed on the metallic substrate;  
wherein a first portion of the thermal barrier coating comprises a normal spinel material and a second portion of the thermal barrier coating comprises an inverse spinel material.

38. (new) The article of manufacture of claim 32, wherein the spinel material is present as a mixture of the type  $AB_2X_4$ -AX- $B_2X_3$ .

39. (new) The article of manufacture of claim 35, wherein the spinel material is present as a mixture of the type  $AB_2X_4$ -AX- $B_2X_3$ .

40. (new) The article of manufacture of claim 37, wherein the thermal barrier coating comprises a spinel material present as a mixture of the type  $AB_2X_4$ -AX- $B_2X_3$ .